

REVIEW

- ✦ When sodium nitrate combines with calcium chloride they produce sodium chloride and calcium nitrate. If you begin with 6.1 g of sodium nitrate and 3.2 grams of calcium chloride, what is the limiting reagent? What is the excess reagent? How much excess reagent is left?

Connection:

If vitamins and minerals are not present in sufficient quantities in the human body, they become limiting reactants in reactions they are involved in. For example, if the body does not have enough vitamin B-12, bone marrow does not produce enough mature red blood cells and that person becomes anemic.

Bad things happen if there are too much of any substance as well.

- ✧ Percent Yield:
- ✧ $\text{Actual} / \text{Theoretical} \times 100 = \% \text{ Yield}$
- ✧ Actual Yield: What you determine in an experiment.
- ✧ Theoretical Yield: What you are expected to get.
Can you have more than 100% yield?
Can you have less than what is expected?
- ✧ Errors in EXPERIMENTS-
 - *not YOUR errors
 - *not YOUR partner's errors
 - *not error in calculations (because who does them?)



- ✧ Determine the limiting reagent and the percent yield if 14.0 g of nitrogen combine with 9.0 g of hydrogen to produce 16.1 g of NH_3 . ALSO How much of the excess reagent is left over?

- ❖ How many grams of $\text{CH}_3\text{COOC}_5\text{H}_{11}$ should form if 4808 g are theoretically possible with a percent yield of the reaction at 80.5%?

- ✦ The percent yield from the following reaction is 85.0%. What is the actual yield if 1.00×10^3 g of N_2 react with 225 g of H_2 ?